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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,041	07/23/2003	Shotaro Okabe	03500.012269.3	1079

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EXAMINER

MOORE, KARLA A

ART UNIT PAPER NUMBER

1763

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,041

Applicant(s)

OKABE ET AL.

Examiner

Karla Moore

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**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 08/923,259.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

45. Claims 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,920,917 to Nakatani et al.

46. Nakatani et al. disclose an accumulated film forming apparatus in Figure 1 for continuously accumulating a plurality of semiconductor layers on a long substrate (17) by the plasma CVD method (column 1, rows 6-12) substantially as claimed and characterized by a plurality of accumulation chambers and specifically at least a first accumulation chamber (1) having means (15) for making raw material gas flow from the upper part (supply side of the apparatus) toward the lower part (take-up side of the apparatus) in the direction of movement of said long substrate, and a second accumulation chamber (2) having means (15) for making the raw material gas flow from the lower part toward the upper part in the direction of movement of said long substrate, said first accumulation chamber and said second accumulation chamber being connected together by gas gate introducing means (13; column 3, row 67

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through column 4, row 15 and to column 8, rows 34-40) to prevent diffusion of gas from said second accumulation chamber from diffusing into the first accumulation chamber.

3. The apparatus would be capable of using the first accumulation chamber to make a microcrystalline l-type layer and the second accumulation chamber to make a p-type layer using a p-type dopant, if desired, regardless of the specific order of the chambers in the explicitly enclosed embodiment. One of ordinary skill in the art would be familiar with how to adapt the apparatus to perform different methods. See column 13, rows 56-60, where Nakatani et al. teach that other structures may be formed using the apparatus. Also see, column 8, row 49, where Nakatani et al. disclose the use of a p-type doping glass.

4. Examiner also notes that the courts have ruled claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

5. The courts have also ruled that expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). One of ordinary skill in the art would realize that depending on the desired product, different layers could be deposited in each of the chambers of the Nakatani et al. apparatus.

6. With respect to claim 22, Nakatani et al. disclose that the apparatus may be characterized in that the portion for supplying said raw material gas into said accumulation chambers has a member (22; column 3, rows 16-19 and column 8, rows 62-66) for shielding said long substrate from the flow of said raw material gas.

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7. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani et al. as applied to claims 17 and 22 and further in view of U.S. Patent No. 5,031,571 to Igarashi et al.

8. Nakatani et al. disclose the invention substantially as claimed and as described above.

9. However, Nakatani et al. fail to teach the area of an electrode in at least said second accumulation chamber for applying electric power for causing plasma is larger than the area of said long substrate in said accumulation chamber. Nakatani et al. further fail to teach the electrode as fin-shaped or enclosure shaped.

10. Igarashi et al. teach the use of an electrode with a larger surface area than that of a substrate (column 1, rows 35-38). The electrode (Figure 2, 10) is formed fin-shaped and enclosure-shaped (between the fins) for the purpose of uniformly forming a film with excellent properties on a substrate having a large area at a high film-forming speed (column 11, rows 28-33).

11. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a fin-shaped, enclosure-shaped electrode with a larger surface area than a substrate to be processed in Nakatani et al. in order to uniformly form a film with excellent properties on a substrate having a large area at a high film-forming speed as taught by Igarashi et al.

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani et al. and Igarashi et al. as applied to claims 18-20 above, and further in view of U.S. Patent No. 4,767,641 to Kieser et al.

13. Nakatani et al. and Igarashi et al. disclose the invention substantially as claimed and as described above.

14. However, Nakatani et al. and Igarashi et al. fail to fairly teach or suggest that the electrode is positive relative to said long substrate.

15. Kieser et al. teach that the use of fin-shaped, enclosure shaped electrode that is also at a positive potential (Figure 1, 9) for the purpose of forming a particularly high-grade deposition layer (column 3, rows 40-45).

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16. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a fin-shaped, enclosure-shaped electrode that is also at a positive potential in Nakatani et al. and Igarashi et al. in order to form a particularly high-grade deposition layer as taught by Keiser et al.

Response to Arguments

19. Applicant's arguments filed 21 February 2006 have been fully considered but they are not persuasive.

20. With respect to arguments that the separating path in the presently claimed invention is a gas gate, whereas the separating path of Nakatani et al. is not. Examiner disagrees and directs Applicant to column 3, row 67 through column 4, row 15 and to column 8, rows 34-40, where Nakatani et al. do in fact teach that the separating path does acts as a barrier/gas gatebetween chambers.

21. With respect to the fin-shaped electrode recited in claim 19, where the claim was rejected using Nakatani et al. and Igarashi et al. in combination, it is noted that Applicant's argues against the references individually, however, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

22. With respect to Applicant's argument regarding the shielding member of claim 22, Examiner points out that Nakatani discloses a shielding member (see rejection above) as described in Applicant's claims. Examiner also notes that while the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

23. Finally, with respect to the Applicant's amendments changing the number and arrangement of the chambers, as noted above, Nakatani et al. clearly teach that the apparatus can be modified to deposit different types and numbers of layers in the desired order. Thus, the amendments do not overcome the reference.

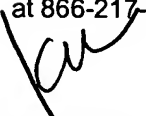
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore
Patent Examiner
Art Unit 1763
13 November 2005